

CONTEMPORARY ISSUES IN FMCG SUPPLY CHAINS

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ABSTRACT

The fast-moving consumer goods (FMCG) industry plays a pivotal role in global economies, supplying essential products that are in constant demand. To thrive in this highly competitive market, FMCG companies must effectively manage their supply chains, ensuring efficiency, resilience, and adaptability. This executive summary presents a comprehensive overview of contemporary issues in supply chain management within the FMCG industry, highlighting key challenges and proposing potential strategies to overcome them. In recent years, the FMCG sector has witnessed a paradigm shift in consumer behaviour, technological advancements, and geopolitical uncertainties, all of which have had a profound impact on supply chain management. One of the major challenges faced by FMCG companies is the increasing pressure to meet ever-changing consumer demands. Consumers now seek personalized products, faster delivery times, and greater sustainability in their purchases. This requires supply chains to be agile and responsive to fluctuations in demand, necessitating the adoption of advanced forecasting techniques and flexible manufacturing processes. Furthermore, the rise of e-commerce has significantly altered the traditional supply chain model, with the direct-to-consumer (DTC) approach gaining prominence. FMCG companies must adapt their supply chains to cater to both brick-and-mortar retailers and online channels, creating an omnichannel strategy to maintain a competitive edge. This integration of physical and digital supply chains presents its own set of complexities, including inventory management, last-mile delivery optimization, and data synchronization. While technological innovations offer great potential for supply chain optimization, they also introduce vulnerabilities in the form of cyber threats and data breaches. As companies leverage internet-of-things (IoT) devices, artificial intelligence (AI), and blockchain technologies, ensuring the security and confidentiality of sensitive supply chain data becomes paramount. Implementing robust cybersecurity measures and investing in talent with expertise in data protection are critical steps to mitigate these risks. Sustainability is another vital aspect that has gained traction in supply chain management within the FMCG industry. Consumers and stakeholders now demand transparency in

supply chains, seeking eco-friendly practices and ethical sourcing. FMCG companies need to adopt sustainable sourcing practices, reduce carbon footprints, and embrace circular economy principles to remain environmentally responsible and earn the trust of their customers. Furthermore, supply chain disruptions, such as natural disasters, geopolitical conflicts, and pandemics, pose significant threats to the FMCG industry. Building resilience in the supply chain is essential to withstand unforeseen challenges. This involves diversifying sourcing locations, creating contingency plans, and establishing strong collaborations with suppliers to maintain a stable supply of essential goods. To address these contemporary issues in supply chain management, FMCG companies must adopt a holistic approach. Integrating data-driven technologies and analytics can enhance visibility and transparency across the supply chain, enabling better decision-making and risk management. Collaborative partnerships with suppliers and logistics providers can facilitate the sharing of information, streamlining operations and reducing lead times. The FMCG industry faces numerous challenges in supply chain management due to evolving consumer preferences, technological disruptions, sustainability concerns, and global uncertainties. To succeed in this dynamic landscape, FMCG companies must prioritize agility, sustainability, and innovation in their supply chain strategies. By embracing emerging technologies, fortifying cybersecurity, and cultivating sustainable practices, these companies can position themselves as leaders in the industry, ensuring continued growth and customer satisfaction in the face of evolving challenges.

Keywords : Fast-moving consumer goods (FMCG); Global Economies; Ever-changing consumer demands; Artificial intelligence (AI); Blockchain technologies; Robust cybersecurity; Data protection; Sustainability; Integration of data-driven technologies

INTRODUCTION

The FMCG industry is a cornerstone of the global economy, catering to a vast and diverse consumer base with products that are characterized by their rapid turnover and high frequency of purchase. To thrive in this highly competitive sector, FMCG companies must excel at supply chain management to meet ever-changing consumer demands, uphold product quality, and ensure timely delivery to the market. Nonetheless, the FMCG supply chain encounters a multitude of challenges and intricacies, arising from factors such as the growing impact of globalization, the continuous advancements in technology, escalating sustainability considerations, and the ever-evolving preferences of consumers. This research aims to explore and analyse the contemporary issues in supply chain management within the FMCG industry, shedding light on the areas

that require attention and improvement to enhance the industry's overall performance. The FMCG industry has experienced significant globalization, with companies sourcing raw materials from multiple locations, manufacturing in various countries, and distributing products to diverse markets worldwide.

This interconnectedness has introduced complexities, such as longer lead times, logistical challenges, and compliance with varied regulations. Consequently, supply chain managers face the daunting task of orchestrating an intricate network of suppliers, manufacturers, distributors, and retailers while maintaining cost-effectiveness and responsiveness to ever-changing market demands. Recent global events, such as the COVID-19 pandemic and natural disasters, have highlighted the importance of supply chain resilience and risk management in the FMCG industry. Disruptions to transportation, production facilities, or raw material supply chains can severely impact the ability to meet consumer demands and lead to reputational damage. Building a resilient supply chain that can adapt to unforeseen disruptions while effectively managing risks has become a critical concern for FMCG companies.

The FMCG industry's supply chain management faces various contemporary challenges that require thoughtful analysis and strategic solutions. Addressing these issues will not only enhance operational efficiency but also contribute to the industry's sustainability, customer satisfaction, and overall growth. Through this research, we aim to contribute to the existing body of knowledge on supply chain management in the FMCG industry and offer valuable insights to industry practitioners and policymakers for overcoming these challenges in an ever-evolving business landscape.

PROBLEM STATEMENT

The Fast-Moving Consumer Goods (FMCG) industry faces numerous contemporary issues in supply chain management that hinder its ability to effectively meet consumer demands, maintain product quality, and ensure timely delivery to the market. These challenges arise from the increasing globalization, technological advancements, sustainability concerns, changing consumer preferences, and the need for enhanced supply chain resilience and risk management. The overarching problem is the necessity for FMCG companies to adapt and optimize their supply chain strategies to address these complexities and uncertainties while simultaneously ensuring profitability and sustainability. The expansion of FMCG companies into global markets has created complex supply chain networks with numerous stakeholders, spanning multiple geographical regions. This complexity leads to longer lead times, increased transportation costs, and difficulties in managing inventory efficiently, resulting in potential delays, stockouts, or excess inventory. While technological advancements offer opportunities for increased visibility and efficiency, integrating and managing new technologies into existing supply chain operations presents its own set of challenges. Issues

like data security, compatibility of systems, and the availability of skilled personnel to operate and utilize these technologies effectively become crucial factors in FMCG supply chain management.

OBJECTIVES AND SCOPE OF STUDY

Objectives

1. To assess the impact of sustainability concerns on FMCG supply chains, examining the adoption of sustainable practices, responsible sourcing of raw materials, and strategies to reduce environmental impact while maintaining cost-effectiveness and operational efficiency.
2. To propose effective strategies and solutions for enhancing supply chain resilience and risk management in the FMCG industry

Significance of the study

This research identifies and analyzes the key contemporary issues in supply chain management within the Fast-Moving Consumer Goods (FMCG) industry, focusing on the challenges arising from globalization, technological advancements, and changing consumer preferences. This study assesses the impact of sustainability concerns on FMCG supply chains, examining the adoption of sustainable practices, responsible sourcing of raw materials, and strategies to reduce environmental impact while maintaining cost-effectiveness and operational efficiency. This research proposes effective strategies and solutions for enhancing supply chain resilience and risk management in the FMCG industry.

Indian FMCG Industry

The Indian FMCG (Fast-Moving Consumer Goods) industry plays a pivotal role in the country's economy, catering to the everyday needs of its vast consumer base. FMCG products encompass a wide range of goods that are consumed frequently and have a relatively short shelf life. This industry includes food and beverages, personal care products, home care products, and health and wellness items, among others.

The Indian FMCG industry holds significant importance due to its contribution to the country's GDP, employment generation, and its role in meeting the demands of a diverse and growing population. It serves both urban and rural markets, catering to consumers across various income groups. The industry's growth is driven by several factors, including rising disposable incomes, increasing urbanization, changing lifestyles, and the growing middle class. These factors have led to a shift in consumer preferences, with a greater emphasis on convenience, health and wellness, and premium products. Moreover, increased awareness of hygiene and personal care has become a major driver for the FMCG sector in recent times.

The Indian FMCG industry is characterized by intense competition among both domestic and multinational companies. Market leaders have established strong brand recognition and wide distribution networks, while new entrants continue to bring innovative products and disruptive business models. Additionally, the industry has witnessed a significant boost from the rapid growth of e-commerce, enabling consumers to access a wide range of FMCG products conveniently. However, the FMCG industry in India also faces certain challenges. Price sensitivity and the need for cost-effective products pose challenges to companies trying to maintain profitability. Distribution and supply chain management are critical, especially in a geographically diverse country like India. Government regulations and policies also impact the industry, including labeling requirements, advertising restrictions, and taxation policies.

The Indian FMCG industry is a vital sector of the economy, catering to the diverse needs of consumers across the country. Its growth is driven by changing consumer preferences, rising incomes, and the adoption of digital channels. As the industry continues to evolve, companies must navigate challenges and seize opportunities to stay competitive and meet the evolving demands of Indian consumers.

Importance and Contribution of the FMCG Industry in India

The FMCG (Fast-Moving Consumer Goods) industry holds immense importance and makes a significant contribution to the Indian economy. Here are the key points highlighting the importance and contribution of the FMCG industry in India:

1. **Economic Contribution:** The FMCG industry is one of the largest sectors in India, contributing significantly to the country's GDP. It generates substantial revenue and employment opportunities, both directly and indirectly, along its value chain. The industry's growth and profitability positively impact the overall economic development of the nation.
2. **Employment Generation:** The FMCG industry is a major source of employment in India. It creates jobs across various segments, including manufacturing, packaging, distribution, marketing, and retail. The industry's extensive network of suppliers, distributors, and retailers provides employment opportunities at various skill levels, contributing to economic inclusivity and social development.
3. **Meeting Consumer Needs:** The FMCG industry plays a crucial role in meeting the everyday needs of consumers. It offers a wide range of essential products, including food and beverages, personal care items, household goods, and healthcare products. By providing these goods, the industry ensures the availability of necessities that are consumed frequently by individuals and households across the country.

4. **Catering to Diverse Consumer Base:** India's population is characterized by its vast diversity in terms of culture, language, preferences, and income levels. The FMCG industry caters to this diverse consumer base by offering products tailored to specific regional tastes and preferences. Companies adapt their product portfolios and marketing strategies to cater to the unique demands of different regions, contributing to market inclusivity and customer satisfaction.
5. **Rural Market Development:** The FMCG industry has played a crucial role in developing and expanding the rural market in India. With a significant portion of the population residing in rural areas, FMCG companies have focused on reaching these consumers by developing distribution networks, implementing rural-specific marketing strategies, and launching products suited to rural needs and affordability. This has contributed to rural employment, income generation, and improved living standards.
6. **Revenue Generation and Tax Contribution:** The FMCG industry generates substantial revenue through product sales and contributes significantly to the tax revenues of the government. Taxes such as Goods and Services Tax (GST), excise duty, and customs duties levied on FMCG products provide a substantial source of revenue for the government, which can be utilized for infrastructure development, public welfare programs, and other socio-economic initiatives.
7. **Encouraging Entrepreneurship and Innovation:** The FMCG industry fosters entrepreneurship and innovation, providing opportunities for small and medium-sized enterprises (SMEs) and startups to enter the market. With relatively low entry barriers, the industry encourages innovation in product development, packaging, branding, and marketing strategies. This dynamic environment promotes competitiveness, drives creativity, and fosters a culture of entrepreneurship in the country.

The FMCG industry holds immense importance and makes a significant contribution to the Indian economy. It generates employment, meets consumer needs, drives rural market development, and fosters entrepreneurship and innovation. With its widespread impact on various aspects of the economy and society, the FMCG industry plays a crucial role in the overall development and growth of India.

Market Dynamics: The Indian FMCG market is dynamic and influenced by various factors. Here are some key market dynamics in the Indian FMCG industry:

1. **Changing Consumer Preferences:** Consumer preferences in India are continuously evolving, driven by factors such as income levels, urbanization, and exposure to global trends. Consumers are increasingly

seeking convenience, health and wellness products, and personalized experiences, which impact the demand and growth of FMCG products.

2. **Intense Competition:** The FMCG industry in India is highly competitive, with numerous players vying for market share. Competitors often engage in aggressive marketing and advertising campaigns to capture consumer attention and loyalty. Price sensitivity and the need for product differentiation present challenges and opportunities for companies operating in this competitive landscape.

3. **Distribution and Retail Channels:** The FMCG industry relies heavily on efficient distribution and retail channels. FMCG companies need to establish robust distribution networks to reach both urban and rural markets effectively. The growth of e-commerce has further expanded distribution channels, providing additional avenues for companies to connect with consumers.

4. **Government Regulations and Policies:** The FMCG industry is subject to various regulations and policies imposed by the government. This includes labeling requirements, quality standards, advertising regulations, and taxation policies. Companies need to adhere to these regulations while ensuring compliance and maintaining consumer trust.

5. **Digital Transformation:** The advent of digital technologies and the rise of e-commerce have significantly impacted the FMCG industry. Companies are leveraging digital platforms for marketing, sales, and consumer engagement. The growth of online retailing has provided consumers with more options and convenience, influencing purchasing decisions.

6. **Focus on Sustainability and Social Responsibility:** Increasing consumer awareness about sustainability and social responsibility has prompted FMCG companies to adopt environmentally friendly practices and engage in corporate social responsibility initiatives. Consumers are increasingly inclined to support brands that demonstrate a commitment to sustainability and social causes.

The Indian FMCG industry is characterized by the presence of prominent domestic and multinational players. It operates in a dynamic market influenced by changing consumer preferences, intense competition, evolving distribution channels, government regulations, digital transformation, and the growing emphasis on sustainability and social responsibility. Successful companies in the

Market Size of Indian FMCG

1. **Market Size:**

- The overall market size of the Indian FMCG industry was valued at around USD 63.75 billion in 2022.

- The market has shown steady growth over the years and is expected to reach USD 103.7 billion by 2025, growing at a compound annual growth rate (CAGR) of around 15% during the forecast period.
 - The FMCG sector contributes significantly to India's GDP, accounting for around 2.5-3% of the country's GDP.
2. Product Categories:
- The Indian FMCG market comprises various product categories, including food and beverages, personal care products, home care products, and health and wellness products.
 - The food and beverage segment holds the largest market share within the FMCG sector, driven by factors such as changing consumer preferences, urbanization, and increased disposable incomes.
 - The personal care and home care segments also contribute significantly to the overall market size, driven by rising hygiene consciousness and the need for convenience and comfort.
3. Rural Market Potential:
- The rural market in India plays a crucial role in the FMCG sector's growth and constitutes a substantial portion of the overall market size.
 - FMCG companies have been focusing on expanding their presence in rural areas by developing specific marketing strategies and affordable product offerings tailored to rural consumer needs.
 - The rural market's potential is immense, with increasing disposable incomes, improved infrastructure, and rising aspirations of rural consumers.
4. E-commerce and Digital Influence:
- The advent of e-commerce has significantly impacted the FMCG market in India, providing consumers with convenient access to a wide range of products.
 - The e-commerce channel has witnessed substantial growth, with a surge in online shopping and the emergence of online grocery platforms.
 - Digital influence, including social media, online advertising, and influencer marketing, has become a crucial aspect of FMCG companies' marketing strategies to reach and engage with consumers effectively.
5. COVID-19 Impact:
- The COVID-19 pandemic had a mixed impact on the Indian FMCG market.
 - While certain segments, such as hygiene products, packaged foods, and home care products, experienced increased demand during lockdowns and hygiene consciousness, other segments, such as personal care and discretionary items, faced challenges due to reduced consumer spending and disrupted supply chains.

INDUSTRY PROFILE/THEORETICAL FRAMEWORK

Consumer Behaviour and Buying Patterns in 2022

Here are some key trends observed in consumer behaviour and buying patterns in 2022:

1. **Shift towards E-commerce:** The pandemic accelerated the adoption of e-commerce as consumers increasingly turned to online shopping for convenience, safety, and a wider range of options. E-commerce

platforms witnessed a surge in demand for various products, including groceries, personal care items, electronics, and home essentials.

2. Focus on Health and Hygiene: COVID-19 heightened consumer awareness of health and hygiene, leading to increased demand for products such as hand sanitizers, disinfectants, face masks, and immunity-boosting supplements. Consumers prioritized health and safety considerations while making purchasing decisions.

3. Preference for Trusted Brands: Amid the uncertainty caused by the pandemic, consumers leaned towards trusted and well-established brands. Brand reputation, quality assurance, and reliability became important factors influencing consumer choices. Established FMCG brands with a strong track record gained an advantage over smaller or unknown brands.

4. Value for Money Products: With economic uncertainties and financial constraints, consumers showed a preference for value-for-money products. Price sensitivity and the desire to maximize utility led to increased demand for affordable options, discounts, and promotions. Consumers sought products that offered a good balance of quality and price.

5. Sustainability and Ethical Considerations: Conscious consumerism and environmental awareness gained prominence in 2022. Consumers showed an increased interest in sustainable, eco-friendly, and socially responsible products. They preferred brands that demonstrated commitment to ethical practices, such as responsible sourcing, waste reduction, and packaging sustainability.

6. Digital Influence and Research: Consumers relied heavily on digital channels for research, product discovery, and reviews. Online platforms, social media, and influencers played a significant role in shaping consumer preferences and purchase decisions. Consumers extensively researched products, compared prices, and read customer reviews before making buying choices.

7. Home based Activities and Hobbies: With restrictions on outdoor activities and social gatherings, consumers focused on home-based activities, leading to increased demand for products related to cooking, home improvement, fitness equipment, and entertainment. Cooking ingredients, home exercise equipment, DIY tools, and streaming services witnessed a surge in demand.

8. Changing Work and Lifestyle Dynamics: Remote work arrangements and changes in lifestyle influenced consumer behaviour. With increased time spent at home, consumers invested in home office equipment, home organization products, and comfort-oriented items. Online learning tools and digital entertainment platforms also gained traction.

Significance of Distribution and Supply Chain in FMCG sector

An efficient distribution and supply chain network is critical for the success of FMCG companies in India for several reasons:

1. **Reach and Market Penetration:** A robust distribution network enables FMCG companies to reach consumers in both urban and rural areas, tapping into a vast consumer base and expanding market penetration.
2. **Customer Satisfaction:** A well-managed supply chain ensures that products are available to consumers when and where they need them. This leads to improved customer satisfaction, brand loyalty, and repeat purchases.
3. **Cost Optimization:** Effective supply chain management helps optimize inventory levels, minimize stockouts, and reduce carrying costs. This leads to improved cost efficiencies and higher profitability for FMCG companies.
4. **Competitive Advantage:** FMCG companies with a strong distribution and supply chain network gain a competitive edge over their rivals. The ability to quickly respond to market demands, efficiently manage inventory, and deliver products to consumers faster sets them apart in a highly competitive industry.

Impact of technology advancements on FMCG supply chains

Technology advancements have had a profound impact on FMCG supply chains, revolutionizing the way companies operate and enabling them to achieve significant improvements in efficiency, visibility, and responsiveness. The impact of technology on FMCG supply chains can be observed in various aspects:

1. **Enhanced Visibility and Real-Time Tracking:** Technology solutions such as Internet of Things (IoT) devices and RFID tags enable real-time tracking of products throughout the supply chain. This level of visibility helps companies monitor inventory levels, shipment status, and delivery times, enabling better decision-making and reducing the risk of stock outs or overstocking.
2. **Data-Driven Decision Making:** Advanced analytics and big data processing enable FMCG companies to analyse large volumes of data to gain valuable insights into consumer behaviour, demand patterns, and market trends. This data-driven decision-making approach helps optimize inventory levels, production schedules, and distribution strategies.
3. **Improved Demand Forecasting:** Technology-driven demand forecasting models use historical data and real-time information to accurately predict future demand. This enables FMCG companies to optimize inventory levels, reduce wastage, and meet customer demands more effectively.
4. **Supply Chain Collaboration:** Cloud-based supply chain platforms facilitate collaboration and information sharing among various stakeholders in the supply chain. This ensures seamless communication and coordination between suppliers, manufacturers, distributors, and retailers, leading to smoother operations and faster response times.

5. **Efficient Inventory Management:** Advanced inventory management systems utilize automation and AI-driven algorithms to optimize inventory levels based on demand forecasts, sales trends, and lead times. This helps FMCG companies reduce carrying costs while ensuring product availability.
6. **Streamlined Order Fulfilment:** Technology enables faster and more accurate order processing, reducing order-to-delivery lead times. This leads to improved customer satisfaction and loyalty as products reach customers quickly and efficiently.
7. **E-Commerce Integration:** Technology has facilitated the integration of e-commerce channels into FMCG supply chains. This has enabled companies to reach a broader customer base and offer direct-to-consumer (DTC) options, leading to greater market penetration and customer convenience.
8. **Automation in Warehousing and Distribution:** Robotics and automation technologies are increasingly being adopted in warehouses and distribution centres to handle order picking, packing, and shipping. This leads to increased efficiency, reduced human errors, and faster order fulfilment.
9. **Track and Trace Capabilities:** Blockchain technology is being used to establish a secure and tamper-proof track and trace system, ensuring the authenticity and provenance of products. This helps combat counterfeiting and strengthens supply chain transparency.
10. **Last-Mile Delivery Optimization:** Technology solutions such as route optimization software and GPS tracking systems improve last-mile delivery efficiency. This reduces delivery costs, enhances delivery accuracy, and improves overall customer experience.

Technology advancements have transformed FMCG supply chains, enabling companies to streamline operations, optimize inventory management, and respond to customer demands more effectively. The integration of technologies such as IoT, AI, big data analytics, and blockchain has revolutionized supply chain visibility, decision-making, and collaboration. FMCG companies that leverage technology to its fullest potential gain a competitive advantage, achieve cost efficiencies, and deliver superior customer service in today's fast-paced and competitive market.

Contemporary Challenges in FMCG Supply Chain Management

Contemporary challenges in FMCG supply chain management are numerous, and changing consumer behaviour and demands stand out as a critical factor influencing supply chain operations. The FMCG industry faces a dynamic and evolving consumer landscape, driven by various factors such as technology advancements, socio-economic changes, and shifting preferences. Here are some specific aspects of how changing consumer behaviour and demands pose challenges in FMCG supply chain management:

1. Consumers in the FMCG sector exhibit increasingly diverse and fragmented preferences. Meeting the demands of different customer segments requires FMCG companies to offer a wide range of product variations, leading to complex supply chain management.

2. Consumer preferences are subject to rapid changes, leading to shorter product lifecycles. FMCG companies need to optimize their supply chains to accommodate faster product introductions and phase-outs.
3. FMCG industry experiences seasonal demand peaks and promotional events, such as festivals and sales events. Supply chain planning must be flexible enough to accommodate these fluctuations effectively.
4. Consumers increasingly seek personalized and customized products. FMCG companies must incorporate customization options into their supply chain processes while maintaining cost-effectiveness.
5. Changing consumer behaviour leads to unpredictable demand patterns. FMCG companies need to adopt data-driven demand forecasting and agile supply chain strategies to respond to demand volatility effectively.
6. Consumers are becoming more conscious of environmental and ethical aspects of products. FMCG supply chains must integrate sustainable sourcing, eco-friendly practices, and responsible manufacturing to meet consumer expectations.
7. The growing reliance on digital channels for shopping and information gathering necessitates a digitally enabled supply chain. FMCG companies need to invest in digital technologies to improve visibility, collaboration, and customer engagement.
8. Consumers expect faster delivery times and immediate availability of products. FMCG supply chains need to optimize logistics and last-mile delivery to meet these expectations.

FMCG companies must embrace flexibility, agility, and digitalization to adapt to the evolving consumer landscape effectively. A customer-centric approach, supported by data-driven decision-making, will be essential in addressing these challenges and staying competitive in the dynamic FMCG market.

LITERATURE REVIEW

Donald J. Bowersox, David J. Closs, Theodore P. Stank, and Scott B. Keller (2019) studied that after Enterprise Resource Planning (ERP), Supply Chain Management (SCM) stands as one of the most widely adopted applications to enhance supply chain performance. SCM is a comprehensive business system that seamlessly integrates a company's internal resources with external supply chain operations. It encompasses various applications, including demand, inventory, and transportation planning, which collectively address different stages of the supply chain. Renowned providers such as SAP, BAAN, QAD, Peoplesoft, i2, and Manugistics offer effective Supply Chain solutions to numerous prominent companies like Sony, Mahindra, Asian Paints, Samsung, and Maruti have already implemented SCM solutions.

De Koster et al. (2022) conducted a review for design and control of picking operation in warehouses and according to him order picking can be identified as the most labour-intensive and exorbitant activity in the functioning of almost every warehouse around the globe. It is estimated that almost 55% of the total

warehouse operating expense is from cost of order picking. Any underperformance or delays in order picking process can lead to customer dissatisfaction and high operational expense for the warehouse, and consequently affects for the entire supply chain. Only a robustly designed and optimally controlled order picking process can make the warehouse operate efficiently. This publication gives a literature overview on common decision issues in design and control of manual order-picking processes in Warehouse operations.

Khazode, Vivek & Shah, Bhavin. (2021) in their study comprehensively discusses the existing state-of-the-art warehousing literature and highlights concerned research issues as per the proposed taxonomy. This work put forward a decision framework to develop optimal number of warehouses and their required capacity in a supply chain network. This paper tries to find out specific performance methods and measures, and analyse their effect on the general logistics system.

Jaggi, Prof. (Dr.) Chandra & Khanna et al. (2016) conducted a study on two-warehouse inventory problems considered for deteriorating items with constant demand rate and shortages under inflationary conditions. In today's fluctuating world economy, the cost of goods are affected by inflations and time value of money. As a remedial measure to protect from rising prices, during the inflation period, the organization prefers to keep a higher inventory, thereby increasing the aggregate demand. This additional inventory will require more storage space that much be facilitated by a rented warehouse. Further in the real business world, to retain the freshness of the commodity, most of the warehousing firms adopt the first-in-first-out (FIFO) dispatching policy. In case of items which are deteriorating in nature FIFO policy can be followed which can provide fresh and good conditioned stock to customers thereby resulting in customer satisfaction. The work assumes that the holding cost of items is more in rented warehouse than the cost in owned warehouse because of the modern preserving techniques. Therefore, the best practice to reduce inventory cost is consuming the goods of rented warehouse at the earliest. This warehouse management practice is named as Last-In-First-Out (LIFO) approach.

Adkins, S. (2020) studied that in the west large departmental or discount chains have managed to grab huge market shares and have clout with FMCG companies. On account of their bargaining power, they are able to demand huge discounts from FMCG companies. Like developed markets, modern retailers in India have been trying to extract higher margins from FMCG companies so as to offer better deals to their customers. Unlike in the west margins in distribution are traditionally quite low in India. Hence in India the FMCG sector finds it difficult to offer the kind of deep discounts that the modern retailers have been demanding. On one hand FMCG companies will have to bypass their existing stockists and distributors, so there is a likelihood of channel conflict. On the other hand they also have to examine the impact of higher discounts to

modern retailing on the overall distribution system. Further modern retail chains are also likely to introduce private label brands which will pose a considerable threat to the existing manufacturers

Cox, (2015) found that A research study examining the SCM practices of Indian FMCG organizations revealed distinctive factors categorized on agreement and adoption continua. Supply chain partnership and supply chain networking emerged as dominant factors for Indian FMCG organizations, with high levels of agreement and adoption. On the other hand, leanness or operational efficiency factors exhibited high agreement but low adoption, primarily due to infrastructural bottlenecks and the prevalence of unskilled and semi-skilled suppliers in the supply chain's backend and distributors in the front end.

Interestingly, cross functionality and strategic outsourcing were leading on the adoption continuum. Embracing a truly integrated supply chain demands significant commitment from all supply chain members. Focal firms might need to overhaul their purchasing processes and integrate suppliers' R&D teams directly into their decision-making to leverage both their own core competencies and partners' core capabilities effectively.

Regardless of being national or global, companies recognize the paramount importance of implementing robust supply chain management systems to elevate their business performance and establish themselves as formidable competitors and industry leaders. The study's findings highlight the critical role of collaborative partnerships, efficient networking, and strategic outsourcing in the success of Indian FMCG organizations' supply chains. By addressing infrastructural challenges and investing in skill development, these organizations can further enhance their operational efficiency and fully unlock the potential of integrated supply chains.

Nagarajan V., Savitskie K., Ranganathan S., Sen S. and Alexandrov A. (2016) found that in the distribution realm, it is a prevalent belief that only 50 percent of the promotional efforts actually reach the final customer. This unfortunate reality stems from the unscrupulous practices of certain distributors who deviate from their intended role as facilitators and instead prioritize their own gains. These distributors siphon off a significant portion of the promotion budget for personal benefit, undermining the intended impact of promotional activities. A telling example of this issue emerged in an FMCG company, which discovered that it was paying substantial amounts as rebates to its trade channel due to the unauthorized printing of coupons by some wholesalers and distributors. Additionally, some of these distributors engage in illicit cross-border movement of goods during local promotions, further complicating matters for the FMCG companies. As a result, these companies lose control over the sales of their products, with the goods being diverted to unintended markets instead of the targeted ones. This unauthorized diversion disrupts the planned distribution strategy and hampers the company's efforts to cater to specific market segments effectively.

These challenges force FMCG companies to allocate significant resources towards addressing these issues, without any tangible value being added to their customers. It becomes an inefficient use of valuable resources, and the ultimate impact on customer satisfaction and market performance is compromised due to the unscrupulous practices of some distributors.

RESEARCH METHODOLOGY

Both primary and secondary data is used to fulfill the research objectives. Interviews were conducted to gather the primary data. Secondary data was collected through online references, magazines and newspapers. Five Points Likert scale is used to record the responses for 15 questions. The questions are attached as annexure.

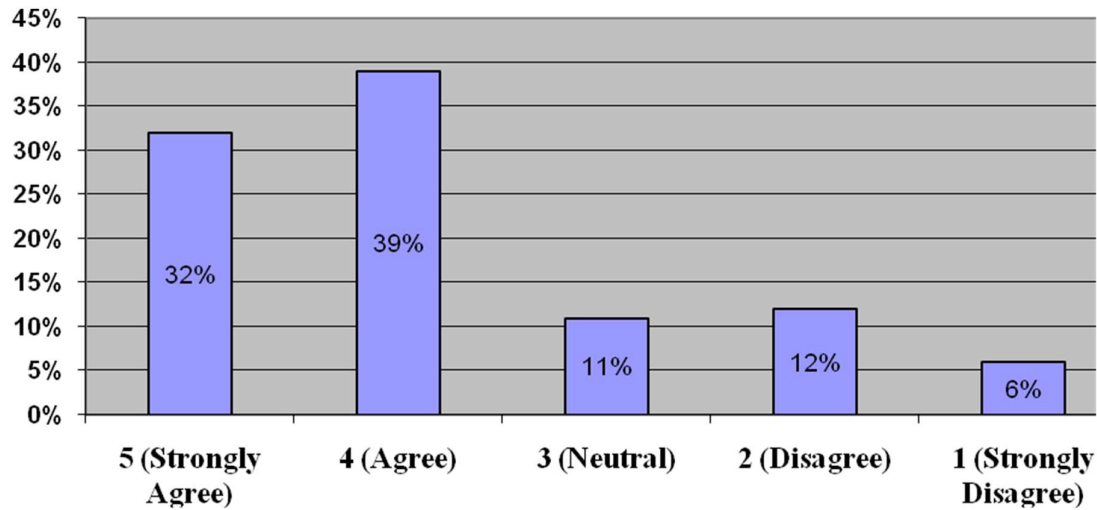
Sample Size: 50

Target respondents: Employees working in FMCG sector

DATA ANALYSIS AND DISCUSSION

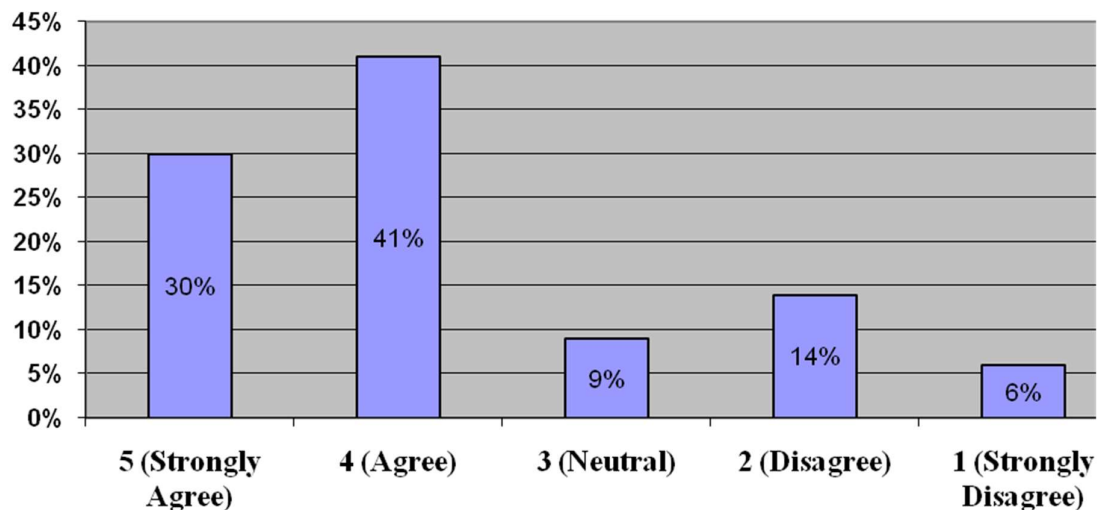
The bar charts represent the responses from the target respondents as given below:

Q1. The FMCG industry faces significant challenges in managing demand volatility and seasonality.



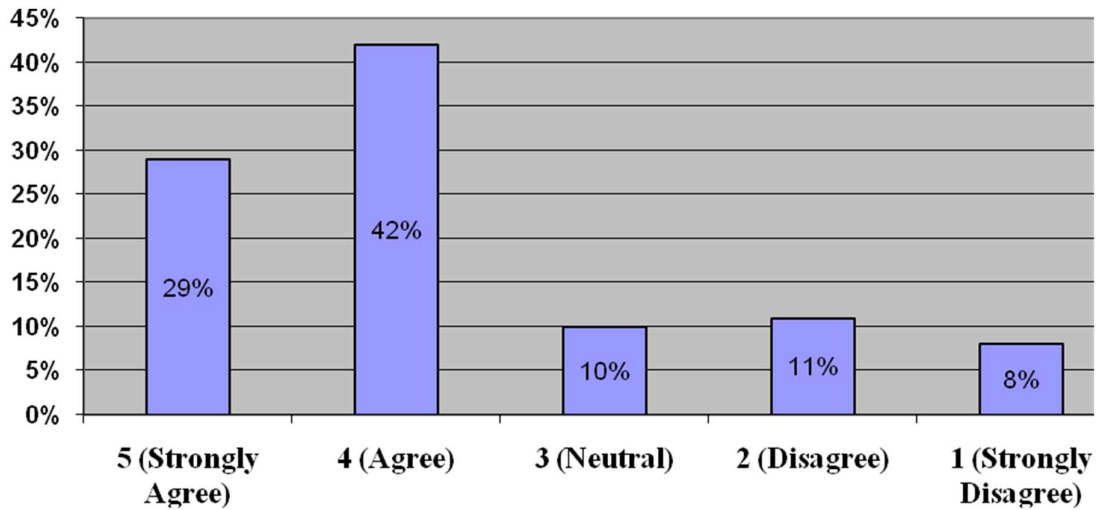
32% respondents were strongly agreed with the above statement however 12% respondents were disagreed with the above statement

Q2.Implementing advanced technology solutions can improve supply chain efficiency in the FMCG industry.



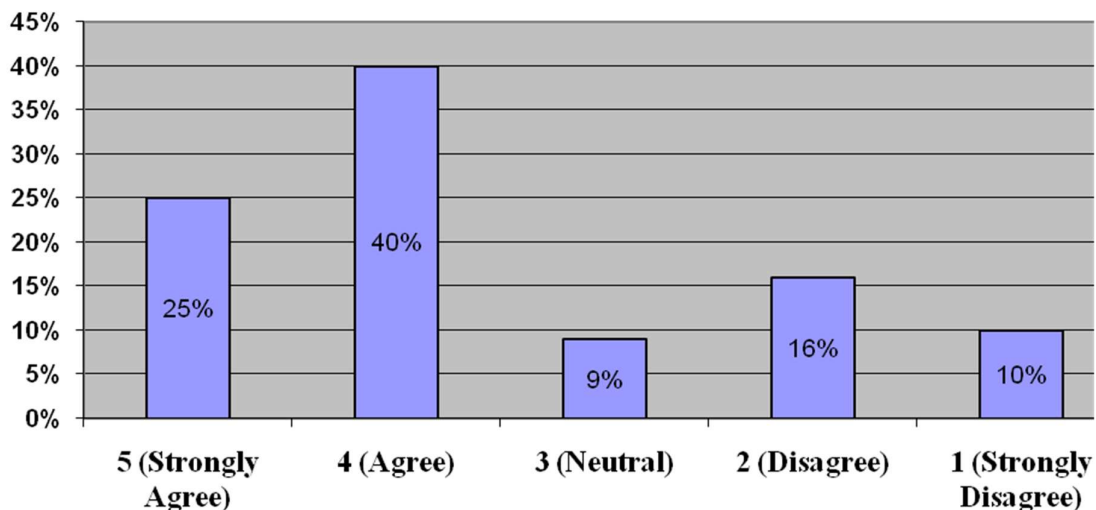
30% respondents were strongly agreed with the above statement however 14% respondents were disagreed with the above statement

Q3. Collaborative forecasting with supply chain partners can enhance demand planning accuracy.



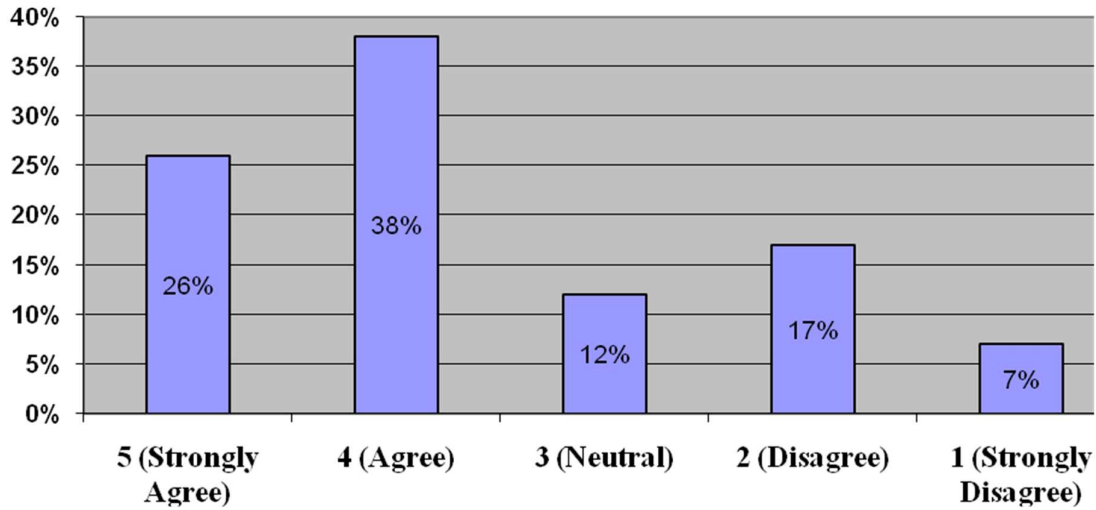
29% respondents were strongly agreed with the above statement however 11% respondents were disagreed with the above statement

Q4. Supply chain disruptions significantly impact our organization's operations and customer service.



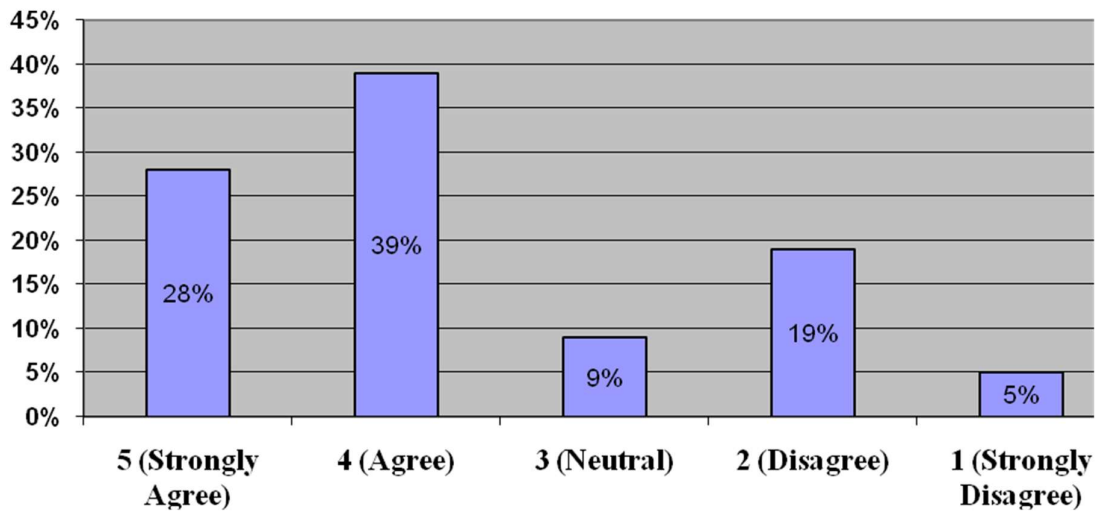
25% respondents were strongly agreed with the above statement however 16% respondents were disagreed with the above statement

Q5. Technology integration has improved collaboration and communication with supply chain partners.



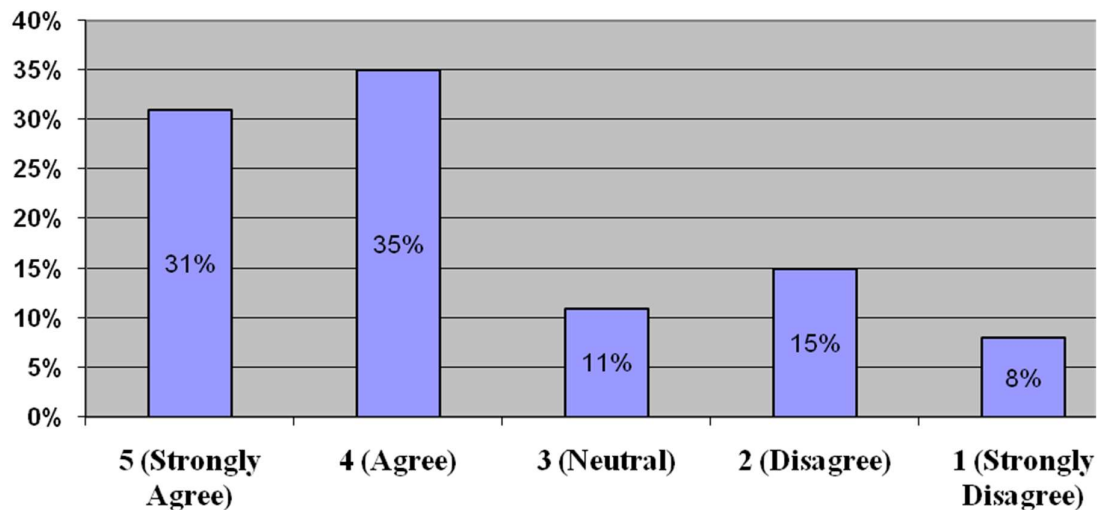
26% respondents were strongly agreed with the above statement however 17% respondents were disagreed with the above statement

Q6. Rapidly changing consumer behaviour poses challenges in accurately forecasting demand for FMCG products.



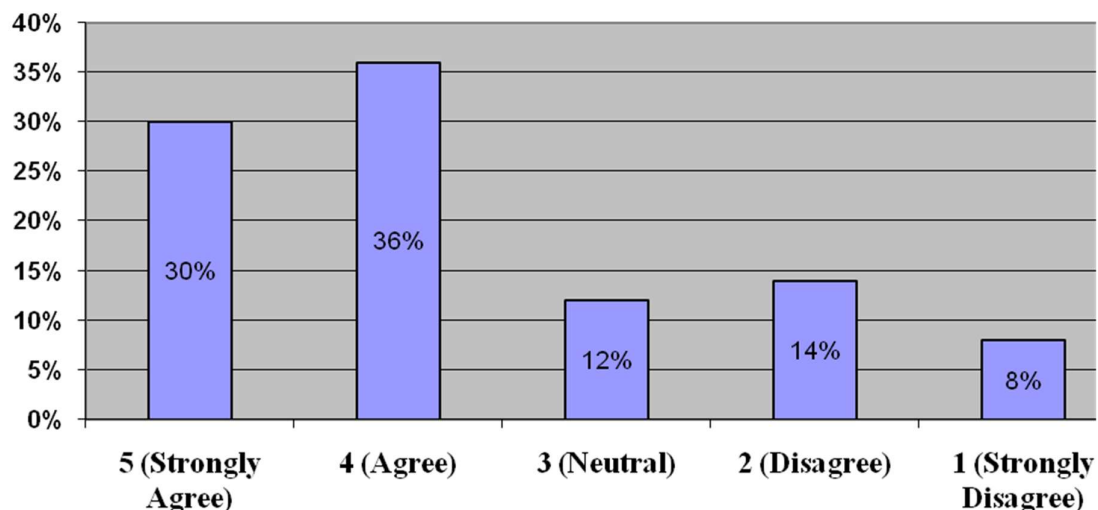
28% respondents were strongly agreed with the above statement however 19% respondents were disagreed with the above statement

Q7.The adoption of data analytics and AI-based forecasting can enhance demand forecasting accuracy.



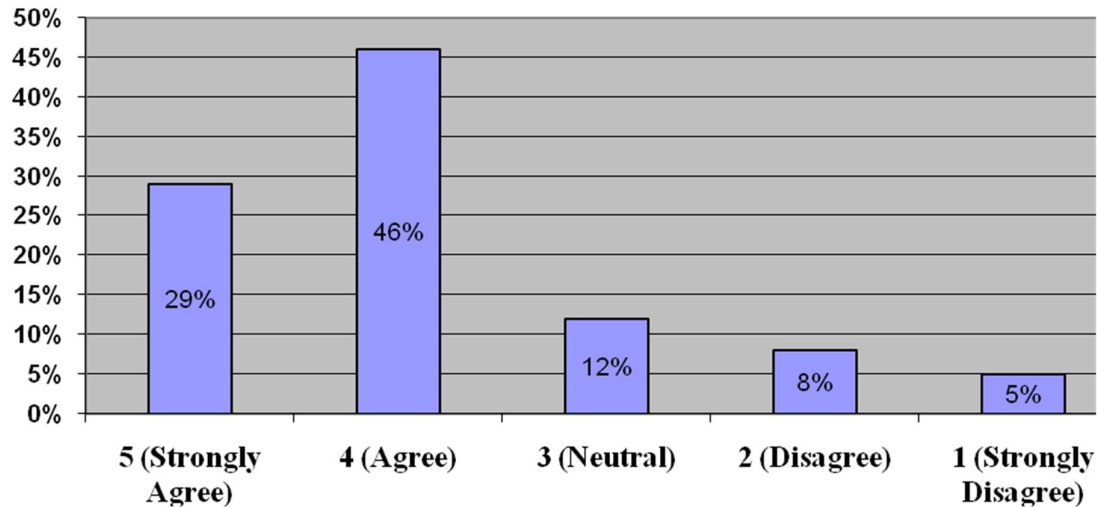
31% respondents were strongly agreed with the above statement however 15% respondents were disagreed with the above statement

Q8.Limited historical data for new product launches hinders accurate demand forecasting.



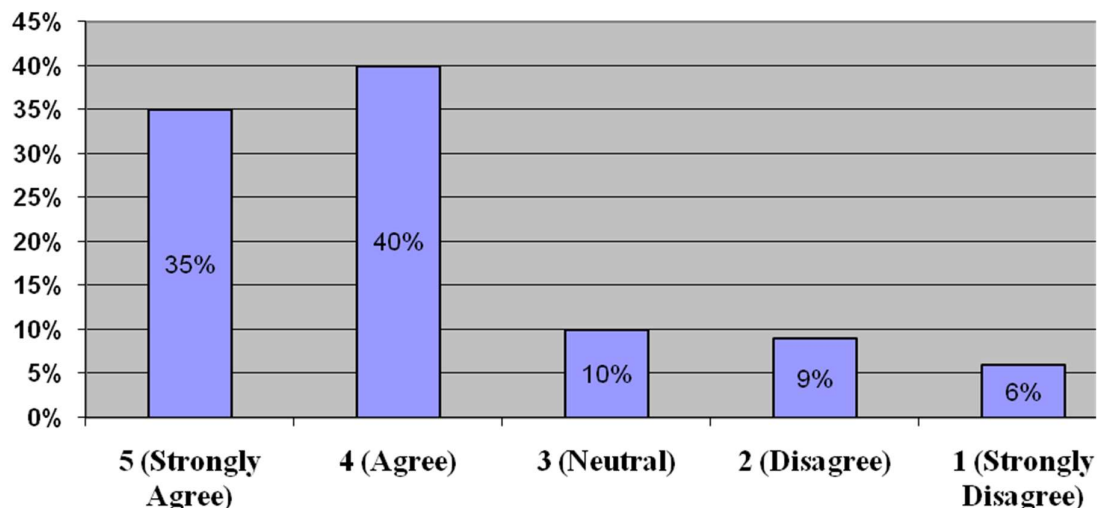
30% respondents were strongly agreed with the above statement however 14% respondents were disagreed with the above statement

Q9. Our organization is proactively preparing to address emerging trends and challenges in supply chain management.



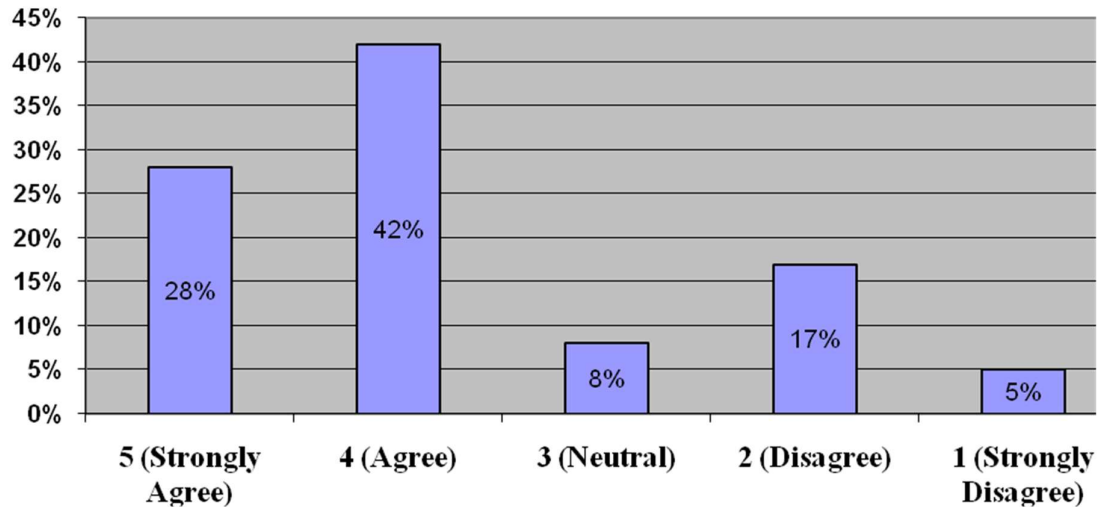
29% respondents were strongly agreed with the above statement however 8% respondents were disagreed with the above statement

Q10. Short product lifecycles and rapidly evolving market trends make demand forecasting challenging.



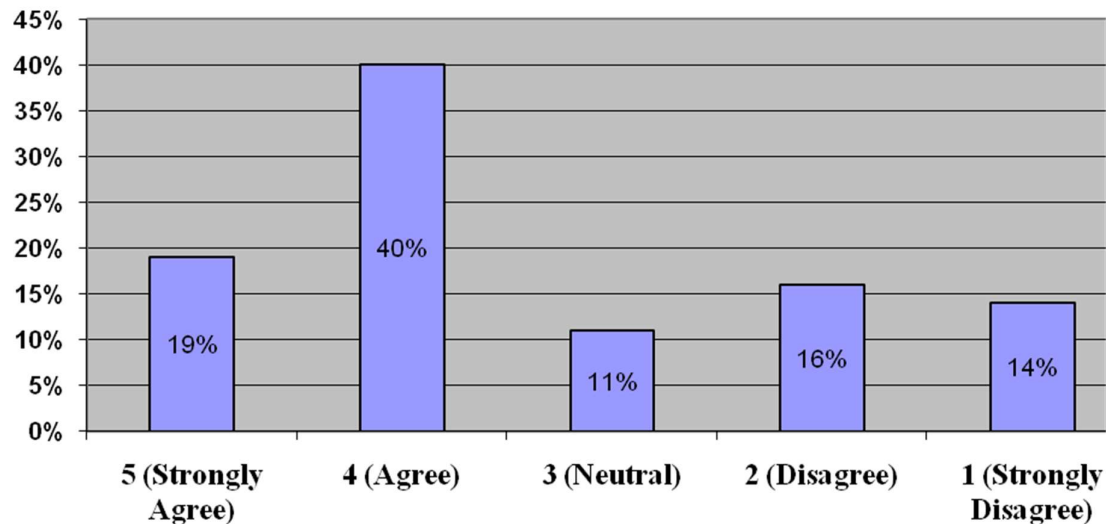
35% respondents were strongly agreed with the above statement however 9% respondents were disagreed with the above statement

Q11.The FMCG industry faces complexities in managing perishable products and short shelf-life items.



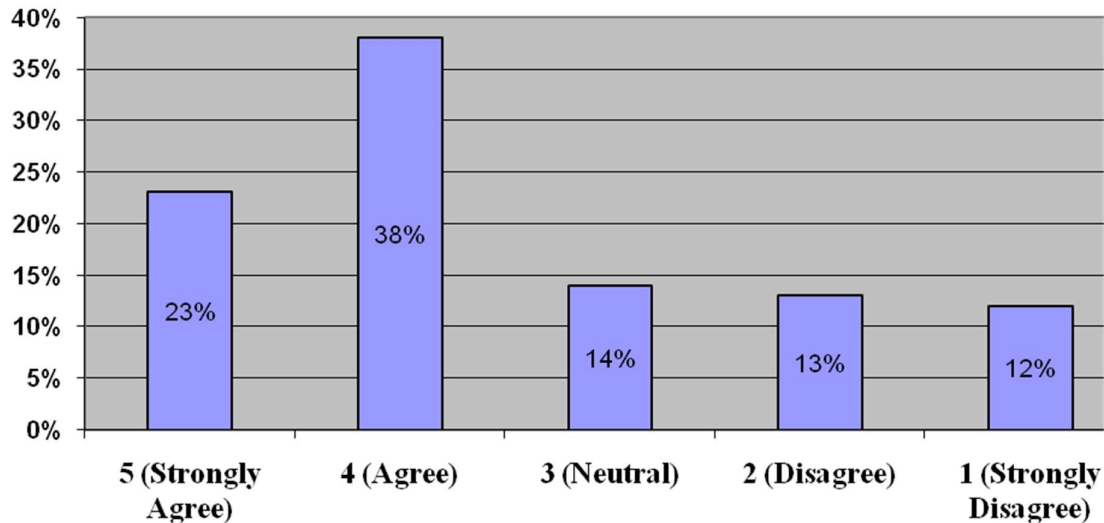
28% respondents were strongly agreed with the above statement however 17% respondents were disagreed with the above statement

Q12.Ensuring timely and efficient order fulfilment is a critical challenge in our supply chain.



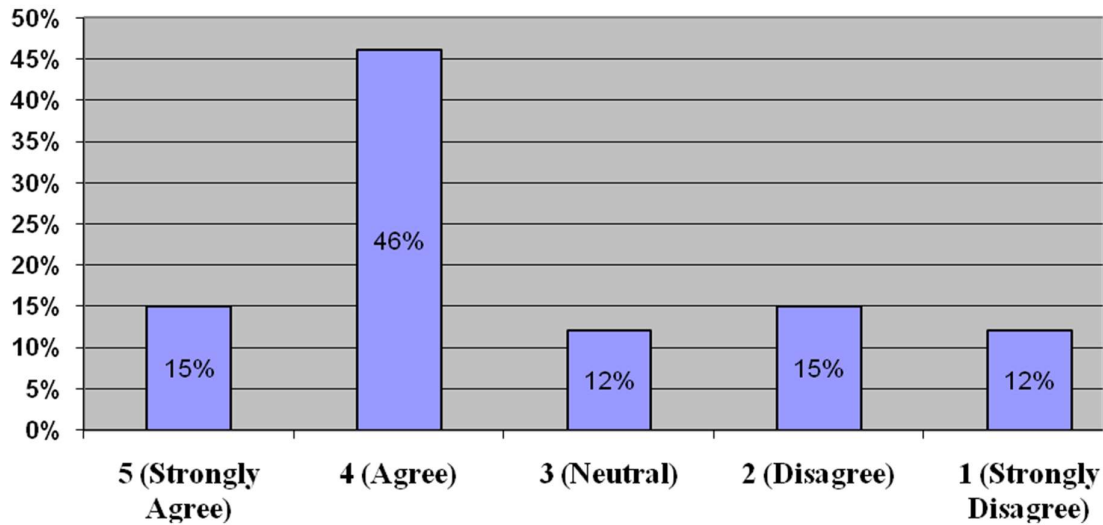
19% respondents were strongly agreed with the above statement however 16% respondents were disagreed with the above statement

Q13.Sustainability and environmental concerns have a growing impact on supply chain management in the FMCG industry.



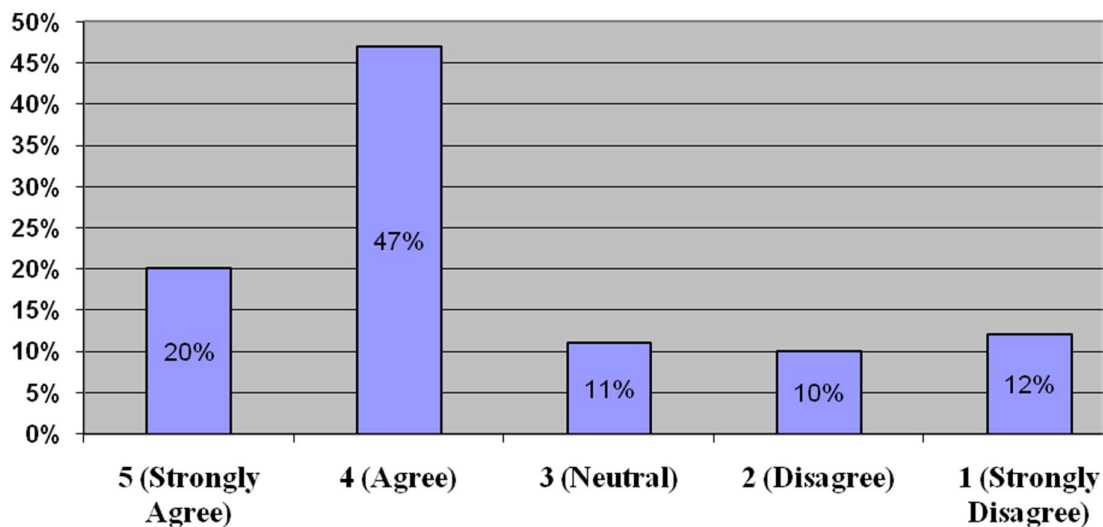
23% respondents were strongly agreed with the above statement however 13% respondents were disagreed with the above statement

Q14.Disruptions in the supply chain, such as natural disasters and geopolitical issues, pose significant risks.



15% respondents were strongly agreed with the above statement however 15% respondents were disagreed with the above statement

Q15. The integration of technology has enhanced real-time visibility into supply chain activities.



20% respondents were strongly agreed with the above statement however 10% respondents were disagreed with the above statement

CONCLUSION AND SUGGESTIONS

Conclusion

The first objective of this research was to identify and analyse the key contemporary issues in FMCG supply chain management. The findings revealed that the industry's globalized nature has led to complex supply chain networks, necessitating careful coordination and management to optimize efficiency. Moreover, the rapid pace of technological advancements and digital transformation poses both opportunities and challenges, urging FMCG companies to embrace innovative technologies while ensuring data security and compatibility. Furthermore, the dynamic consumer landscape calls for accurate demand forecasting and a customer-centric approach to maintain a competitive edge.

The second objective focused on assessing the impact of sustainability concerns on FMCG supply chains. The research highlighted the growing importance of sustainability in the industry, prompting FMCG companies to adopt responsible sourcing practices, reduce environmental footprints, and address societal demands for eco-friendly products. Achieving a balance between sustainability objectives and business goals is vital for long-term success and maintaining consumer trust.

Suggestions

1. **Embrace Technology Adoption:** FMCG companies should invest in advanced technologies such as AI, data analytics, and IoT to improve supply chain visibility, demand forecasting accuracy, and operational efficiency.
2. **Foster Collaboration and Partnerships:** Collaborate closely with suppliers, distributors, and retailers to create a unified and responsive supply chain network. Foster transparent communication and information sharing to enhance coordination.
3. **Implement Just-In-Time (JIT) Approach:** Adopt a JIT approach to minimize inventory levels while ensuring timely order fulfillment. This can reduce carrying costs and enhance working capital management.
4. **Enhance Demand Forecasting Accuracy:** Leverage data-driven demand forecasting methods, including AI-based algorithms and collaborative forecasting, to improve accuracy and responsiveness to changing consumer behavior.
5. **Focus on Sustainability and Green Initiatives:** Incorporate sustainability practices in the supply chain, such as eco-friendly packaging, energy-efficient transportation, and responsible sourcing, to meet the growing demand for environmentally conscious products.

6. **Develop Risk Management Strategies:** Create robust risk management strategies to address supply chain disruptions effectively. Establish contingency plans for natural disasters, geopolitical issues, and unforeseen events.
7. **Optimize Inventory Management:** Employ inventory optimization techniques, such as safety stock management and SKU rationalization, to strike a balance between avoiding stockouts and minimizing excess inventory.
8. **Emphasize Supply Chain Traceability:** Implement supply chain traceability systems to enhance transparency and meet the increasing demand for product provenance and authenticity.
9. **Enhance Last-Mile Delivery:** Focus on improving last-mile delivery capabilities to ensure faster and more reliable delivery to end customers, enhancing customer satisfaction and loyalty.
10. **Develop Agile Supply Chain Practices:** Cultivate agility in supply chain processes to adapt quickly to changing market conditions, consumer preferences, and emerging trends.
11. **Invest in Employee Training:** Provide regular training and development opportunities to supply chain personnel to ensure they possess the necessary skills and expertise to navigate contemporary supply chain challenges effectively.
12. **Monitor Regulatory Compliance:** Stay up-to-date with evolving regulatory and compliance requirements related to product safety, labeling, and quality standards. Ensure that the supply chain is fully compliant with relevant laws and regulations.

By implementing these recommendations, FMCG companies can address the contemporary issues in supply chain management, enhance operational resilience, and gain a competitive edge in the dynamic FMCG industry.

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ANNEXURE-QUESTIONNAIRE

Q1. The FMCG industry faces significant challenges in managing demand volatility and seasonality.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q2. Implementing advanced technology solutions can improve supply chain efficiency in the FMCG industry.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q3. Collaborative forecasting with supply chain partners can enhance demand planning accuracy.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q4. Supply chain disruptions significantly impact our organization's operations and customer service.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q5. Technology integration has improved collaboration and communication with supply chain partners.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q6. Rapidly changing consumer behavior poses challenges in accurately forecasting demand for FMCG products.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q7. The adoption of data analytics and AI-based forecasting can enhance demand forecasting accuracy.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q8. Limited historical data for new product launches hinders accurate demand forecasting.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q9. Our organization is proactively preparing to address emerging trends and challenges in supply chain management.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q10.Short product lifecycles and rapidly evolving market trends make demand forecasting challenging.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q11.The FMCG industry faces complexities in managing perishable products and short shelf-life items.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q12.Ensuring timely and efficient order fulfilment is a critical challenge in our supply chain.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q13.Sustainability and environmental concerns have a growing impact on supply chain management in the FMCG industry.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q14. Disruptions in the supply chain, such as natural disasters and geopolitical issues, pose significant risks.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree

Q15. The integration of technology has enhanced real-time visibility into supply chain activities.

(5) Strongly Agree

(4) Agree

(3) Neutral

(2) Disagree

(1) Strongly Disagree